

**To:** Paul Dabbs, DWR  
Kamyar Guivetchi, DWR

**From:** Dr. Peter H. Gleick, Pacific Institute

**Date:** January 21, 2005

**Subject:** Problems with Climate Change Sections of Volumes 1 to 4

Kamyar,

Below are some important comments on errors and misleading text associated with the Climate Change sections of Volumes 1 to 4. Volume 1 edits apply to the most recent draft available. Volumes 2-4 come from the new text just released.

Some of these proposed changes are vital, as noted.

**Volume 1: June 7, 2004 Version**

Page 8, Findings and Recommended Actions: Recommendation 9: Replace last sentence with: **“DWR should develop alternative flow data to help State and regional planners to both test potential effects of climate change on different management strategies, and test the ability of different management strategies to mitigate the impacts of climate change.”**

[This change should also be made on page 16 of the Chapter 5 Implementation Plan.]

Page 8, Chapter 2, California Water Today: Replace the second sentence with: **“Mounting scientific evidence suggests that climate changes could significantly change California’s water conditions from those expected under the historical record. Higher temperatures are likely to dramatically affect the snowpack and reduce natural water storage...More variability...”**

**Volume 2:**

Surface Storage Regional/Local section:

page 2, 3rd paragraph

“New surface storage can also help reduce the risk associated with potential future climate change by mitigating the effects of a relatively smaller seasonal snowpack storage capacity as well as increased or more sustained peak flood flows.”

Please add immediately following this: **“Research also suggests that similar benefits can be achieved at lower cost through system reoperation rather than new construction. More analysis of this issue is needed.”**

[This point has been made over and over again and is critical. It must be included anytime DWR suggests new “storage” as a possible solution to climate impacts.]

System Reoperation section:

page 2, last paragraph (most extensive reference)

“Global climate change has also prompted discussion of system reoperation. Specific effects of global climate change on water resource management in California are still uncertain, but it now appears likely that climate change will result in altered snowpack accumulation and melting and runoff patterns and timing. Other impacts are also expected on water supply, sea level, floods and droughts, water demands, water temperature, plant and animal life including livestock, hydroelectric power, wild fires, recreation, water quality, soil moisture, groundwater, and ecosystems. California water managers should increase efforts to evaluate climate change and study ways of incorporating flexibility into the system to respond to climate change.”

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[This section was written in a way that suggests less certainty in the climate science than actually exists – especially impacts on snowfall and snowmelt. Please use the changes above, which I’ve highlighted in Track Changes.]

**Volume 4:**

Planning Section

“In planning for future water supplies and needs, the hydrology of the past century may not be a reasonable measure of the climate in Northern California. The flow record available for California is rather short for determining hydrologic risks, extending back only about 100 years with mostly qualitative information perhaps for another 100 years. Past tree ring studies have shown extensive dry periods far exceeding the 6 year maximum that was recorded in the last century. Climate change now seems likely to significantly affect Sierra snow pack and the state’s hydrology.”

Deleted: For potential significant reductions to the Sierra snow pack from climate change as it may affect current hydrology is discussed under global climate change.”